



Op 1631

PATENT
Attorney Docket No. P05413US4

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Maranas, et al. Group Art Unit: 1631
SERIAL NO: 10/037,572 Examiner: C. Mahatan
FILED: November 9, 2001 Confirmation No: 6518
TITLE: A MODELING FRAME WORK FOR PREDICTING THE NUMBER, TYPE AND
DISTRIBUTION OF CROSSOVERS IN DIRECTED EVOLUTION EXPERIMENTS

INFORMATION DISCLOSURE STATEMENT
FILED WITHIN THREE MONTHS OF COMMUNICATION
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Dear Sir:

Attached are Forms PTO/SB/08A and 08B (formerly Form PTO-1449) listing the relevant art known to the applicant herein. Copies of the references are enclosed, including the International Search Report from the related PCT application. The Examiner is requested to consider the references and make them of record.

Each item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this information disclosure statement.

The filing of this information disclosure statement shall not be construed as a representation that a search has been made (37 C.F.R. § 1.97(g)), an admission that the

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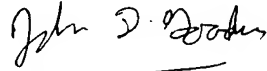
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John D. Goodhue

information cited is, or is considered to be, material to patentability, or that no other material information exists.

The filing of this information disclosure statement shall not be construed as an admission against interest in any manner.

Respectfully submitted,



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Attorneys of Record



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| Substitute for form 1449A/PTO | | | | Complete if Known | |
| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary) | | | | Application Number | 10/037,572 |
| | | | | Filing Date | November 9, 2001 |
| | | | | First Named Inventor | Maranas, et al. |
| | | | | Art Unit | 1631 |
| | | | | Examiner Name | C. Mahatan |
| Sheet | 1 | of | 1 | Attorney Docket Number | P05413US4 |

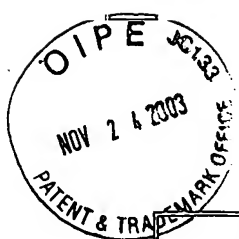
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| U.S. PATENT DOCUMENTS | | | | | |
|-----------------------|-----------------------|---|--------------------------------|--|---|
| Examiner Initials * | Cite No. ¹ | Document Number Number - Kind Code ² (if known) | Publication Date MM-DD-YYYY | Name of Patentee or Applicant of Cited Document | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear |
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| FOREIGN PATENT DOCUMENTS | | | | | | |
|--------------------------|-----------------------|---|--------------------------------|--|---|----------------|
| Examiner Initials * | Cite No. ¹ | Foreign Patent Document Country Code ³ - Number ⁴ - Kind Code ⁵ (if known) | Publication Date MM-DD-YYYY | Name of Patentee or Applicant of Cited Document | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear | T ⁶ |
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| Substitute for form 1449B/PTO | | Complete if Known | |
| | | Application Number | 10/037,572 |
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| | | First Named Inventor | Maranas, et al. |
| | | Group Art Unit | 1631 |
| | | Examiner Name | C. Mahatan |
| | | Attorney Docket Number | P06413US4 |
| Sheet | 2 | of | 2 |

| OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS | | | |
|---|--------------------------|--|----------------|
| Examiner Initials * | Cite No. ¹ | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | T ² |
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| | ✓ | LEONARD D. BOGARAD, et al.; <i>A hierarchical approach to protein molecular evolution</i> ; Proceedings of the National Academy of Sciences of the United States; V 96, No. 6; 3/16/99; Pgs. 2591-2595, | |
| | ✓ | G. L. MOORE, et al.; <i>Modeling DNA mutation and recombination for directed evolution experiments</i> ; Journal of Theoretical Biology United Kingdom, V 203, No. 3; 08/07/00; Pgs. 483-503 | |
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| | ✓ | STEFAN LUTZ, et al.; <i>Creating multiple-crossover DNA libraries independent of sequence identity</i> ; Proceedings of the National Academy of Sciences of the United States; V 98, No. 20; 09/25/01; Pgs. 11248-11253 | |
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